

PLANTS COLLECTED BY MRS J. VISSER—HOOFT
DURING THE SECOND EXPEDITION TO
• THE KARA-KORUM MOUNTAINS
IN THE YEAR 1925

by

H. E. DOLK.

The region where the plants mentioned in the following list were found is situated between latitude 36° and 37° north, longitude $74^{\circ} 20'$ and $75^{\circ} 50'$ east of Greenwich. The route followed started from Hunza, between the Hindu Kush and the Pamirs on the Gilgit-Garkand road and led:

1. to the Khunjerab, Ghujerab and Shimshal valleys (including many unknown lateral valleys and glaciers) all of these situated on the northern side of the Kara-Korum range;
2. the Batura glacier which reached the Hunza valley beyond Pasu;
3. the Hispar glacier, in the State of Nagar, up to the Hispar-Kunyang junction.

The whole district is an arid desert of sand and stones, where deeply cut valleys and ravines penetrate into the heart of the gigantic mountains which rise to a height of 25.868 feet (7830 m). Cultivation is only possible where the soil is irrigated. Scanty patches of arable land surround the villages, but decrease according to altitude. The plants growing as weeds in the fields were found on the Hunza-Gilgit road and in Shimsal-village.

Plant life outside the irrigated area is exceedingly rare; however small oases exist in the uninhabited desert,

right in the interior of the mountains, where water flows abundantly. It is thus possible suddenly to come across a profusion of grass and flowering plants shaded by shrubs and trees.

This occurs in the valleys, but also occasionally right at the edge of the glaciers between the mountain slope and the ice. The alpine „pastures” are without exception terribly scarce and meagre.

POLYPODIACEAE.

Adiantum capillus-veneris Linn. Sp. Pl. 1558 — Beddome: Ferns of British India p. 84 — Hooker: Sp. Fil. Vol. II p. 36 — Hooker: Syn. Fil. p. 123.

Gircha, 2600 m 8 June Coll. Visser-Hooft no. 3. Half in the water on the banks of a brook. Only found at this place.

Specimens seen: Kotgar Khasi Hills alt. 4000 ped., coll. G. Mann — Luskai Hills (Herb. Hort. Calcut.) coll. Prayer 1890 — Western Himal. Prov. Kashmir, coll. Schlagintweit (1856) no. 4603 — Hab.? Falconer no. 1251.

CUPRESSACEAE.

Juniperus macropoda Boiss. Fl. Orient. V p. 709 — Hooker Fl. Br. Ind. V 647 = *Jun. excelsa* Brand.

Bara Khun Valley, 3500 m 18 June coll. Visser-Hooft no. 36 Sandy and stony soil. Erect, sometimes creeping over the stones.

Specimens seen: Hab. Tibet occ. reg. temp. alt. 5—15000 ped. coll. Thomson (Herb. Ind. or. Hook. f. et Th.).

GNETACEAE.

Ephedra Gerardiana Wall. A num. list of dried spec. no. 6048. var. *sikkimensis* Stapf: Die Arten der Gattung Ephedra. Denkschr. der Kais. Akad. Wien Bd. 56 p. 75 — Hooker: Fl. Br. Ind. V p. 863 — Henrard: Plants collected during the year 1922 by Mr and Mrs Visser—Hooft during

their Kara-Korum Expedition, Mededeelingen van 's Rijks Herbarium Leiden no. 52 p. 1 = *Ephedra vulgaris* Stew. et Br.

Shimshal Valley, 4200 m 20 Aug. coll. Visser—Hooft no. 83. Sandy soil, small shrubs.

Specimens seen: *Ephedra vulgaris* St. et Br. Hab. Sikkim reg. alp. alt. 14—17.000 ped. coll. Hooker (Herb. Ind. or. Hook. f. et Th.)

GRAMINEAE.

(by J. Th. Henrard)

Agrostis alba L. Sp. plant. p. 63.

Shimshal, 3000 m., 12 July, Visser—Hooft no. 71.

Distribution: North temperate regions of the world.

Stipa splendens Trinius, ap. Sprengel, Neue Entdeck. II. p. 54. Hook. f. Fl. British India VII. p. 232. = *Stipa altaica* Trinius ex Ledebour Fl. Altaica I. p. 80.

Shimshal, 3000 m., 14 July, Visser—Hooft no. 72.

Distribution: Western Tibet and Siberia.

Calamagrostis emodensis Grisebach in Gött. Nachr. (1868) p. 80, Hook. f. Fl. Brit. Ind. VII. p. 261.

var. *breviseta* Hackel ap. O. Paulsen in Olufsen's Second Pamir Ekspedition, Vid. Med. f. Naturk. Foren. (1903) p. 167.

Khunjerab valley, 3000 m, 12 June, on sand very common, Visser—Hooft no. 18.

Distribution: Temperate Himalaya.

Poa attenuata Trinius var. *versicolor* Regel, Descriptiones Plantarum novar. et minus cognit. Fasc. VIII. (1881) p. 69.

Khunjerab-valley, 3250 m on sand, 14 June, Visser—Hooft no. 21.

Distribution of the species: Alpine Himalaya and Tibet to Persia and Turkestan, also in Northern Asia. The variety together with the typical *P. attenuata*.

Poa pratensis L. Sp. Pl. p. 67, Reichenbach, Ic. Fl. Germ. t. 88. Boiss. Fl. Or. V. p. 601.

Shimshal, 3000 m, 12 July, Visser—Hooft no. 73.

Distribution: North temperate regions of the Old and New world.

Poa alpina L. Sp. pl. p. 67, Hook f. Fl. br. Ind. I. c. p. 338.

Bukselvalley, 3500 m, 29 June, Visser—Hooft no. 47.

Distribution: Himalaya and Western Tibet, Arctic and alpine regions of Europe.

Agropyron longearistatum Boiss. Fl. Or. V. (1884) p. 660.

Khunjerab-valley on sand, 3250 m, 14 June, Visser—Hooft no. 20.

Distribution: Himalaya and Tibet to Affghan and Persia.

Agropyron semicostatum Nees ex Steudel, Synopsis Plant. Glumac. (1854) p. 346, Boiss. Fl. Or. I. c. p. 662.

Shimshal, 3000 m, collected together with *Stipa splendens*, 14 July, Visser—Hooft, no. 72 bis.

Distribution: Temperate Himalaya from Kashmir to Sikkim, also in Affghan and Turkestan.

CYPERACEAE.

Cobresia nitens C. B. Clarke: Journ. Linn. Soc. XX 379 t. 30. Clarke in Hook. Fl. Br. Ind. vol. VI p. 697. Küenthal: Das Pflanzenreich IV 20 p. 34.

Bara-Khun valley, 18 June 3500 m coll. Visser—Hooft no. 37a. Growing on a sandy soil. Very frequent in all Khunjerab, Ghujerab and Shimshal valleys.

No specimens seen.

Cobresia capillifolia C. B. Clarke: Journ. Linn. Soc. XX 378. Clarke in Hook. Fl. Br. Ind. vol. VI p. 697. Küenthal: Das Pflanzenreich IV 20 p. 36.

Bara-Khun valley, 18 June 3500 m coll. Visser—Hooft. no. 37b. Growing on a sandy soil. Very frequent in all Khunjerab, Ghujerab and Shimshal valleys.

No specimens seen.

Cobresia caricina? Willd. Sp. Pl. IV 206 — C. B. Clarke: Journ. Linn. Soc. XX 379 Küenthal: Das Pflanzenreich IV, 20, p. 45.

Bara-Khun valley, 18 June, 3500 m coll. Visser—Hooft no. 37c. Growing on a sandy soil. Very frequent in all Khunjerab, Ghujerab and Shimshal valleys.

No specimens seen. As the specimen is very incompletely collected, I am not sure that the determination is right.

Carex melanantha C. A. Mey. Led. Fl. Alt. IV 216. Clarke: Fl. Br. Ind. vol. VI p. 733. Boiss: Fl. Orient. V 416. Küenthal: Das Pflanzenreich IV 20 p. 391. Buksel-Camp, 4000 m 27 June coll. Visser—Hooft no. 38. Growing in all alpine pastures at an altitude of 4000 m.

Specimens seen: Tibet (Herb. Falconer no. 1196). N. W. Himal. Prov. Lahol (Herb. Schlagintweit no. 4121).

LILIACEAE.

Allium blandum Wall. Plant. As. Rar. III (1832) p. 38 t. 260. Baker: On the Alliums of India etc. Journ. Bot. New. Ser. vol. II (1874) p. 295. Hooker: Fl. Br. Ind. vol. VI p. 339. Henrard: loc. cit. p. 2 = Allium spec. no. 15 Herb. Ind. or. Hook. f. et Th.

Ghujerab, 3800 m 3 July coll. Visser—Hooft no. 60. In the river-channel, also on the slope between the grass.

Specimens seen: Malony-dal alt. 5090 m coll. Visser—Hooft 1922 no. 44 — Tibet occ. reg. alp. alt. 14—17000

feet coll. Thomson (Herb. Ind. or. Hook. f. et Th.) — Tibet occ. reg. alp. alt. 13—16.000 feet coll. Thomson *Allium nutans* L.? (Herb. Ind. or. Hook. f. et Th.).

Lloydia alpina Salisb. Trans. Hort. Soc. I (1812) p. 328 = *Ll. serotina* Reichb. Hooker: Fl. Br. Ind. vol. VI p. 354. Boiss: Fl. Orient. V 202.

Buksel-valley, 4000 m 29 June coll. Visser—Hooft no. 46. Growing between the grass.

Specimens seen: Scesla valley alt. 13.500 feet, Tibet Frontier Commission 1904 (Youngshusband) — Tibet reg. alp. alt. 12—17.000 feet coll. Thomson (Herb. Ind. or. Hook. f. et Th.) — Sikkim coll. Dungboo (Herb. Hort. Bot. Calcut.) — Sikkim coll. Dr. King's collector (Herb. Hort. Bot. Calcut.) — Sikkim reg. alp. alt. 11—14.000 feet coll. Hooker (Herb. Ind. or. Hook. f. et Th.).

Gagea lutea Schultz.? Syst. VII p. 538.

Boiss.: Fl. Orient V 207. Hooker: Fl. Br. Ind. vol. VI p. 355.

Bara-Khun valley, 4000 m 16 June coll. Visser-Hooft no. 54.

No Indian specimens seen. The European differ in the size and number of the flowers.

ORCHIDACEAE.

Orchis latifolia L. Sp. Pl. 1334. Don: Prodr. Fl. Nepal p. 23. Hooker: Fl. Br. Ind. Vol. VI p. 127. Boiss.: Fl. Orient. V 71.

Gircha 2600 m 8 June coll. Visser—Hooft no. 12.

Between the grass on the banks of a brook. Not common.

Specimens seen: Western Himal. Lahol coll. Schlagintweit no. 4150 — Tibet Balti coll. Schlagintweit no. 6010 — Hab? Falconer no. 1045.

SALICACEAE.

Salix pycnostachya Anders. Journ. Linn. Soc. vol. IV p. 44. D.C.: Prodr. XVI 2 p. 309 var. *alpina* Hook. f.: Fl. Br. Ind. Vol. V p. 636 = *Salix purpurea* L. in Herb. Ind. or. Hook. f. et Th.

Khunjerab, 3500 m 18 June coll. Visser—Hooft no. 39. Sandy soil along the banks of the river.

Specimens seen: Zanskar reg. alp. alt. 10—14.000 feet coll. Thomson. *Salix purpurea* L? var. *tenuijulis* H. Alt. (Herb. Ind. or. Hook. f. et Th.).

BETULACEAE.

Betula fruticosa Pall. Reise III. Winkler in Das Pflanzenreich IV 61 p. 87.

Khunjerab, 3500 m 18 June coll. Visser—Hooft no. 40. Sandy soil, along the banks of the river.

Specimens seen: Hab. Siberia (Herb. Oudemans) — Nertschinsk F. Karo Plantae Dauricae n. 52.

POLYGONACEAE.

Polygonum affine Don: Prodr. Fl. Nep. 70. Meissn: D. C. Prodr. XIV 1. p. 126. Hooker: Fl. Br. Ind. vol. V p. 33 = *Pol. Brunonis* Meissn. in Wall. Pl. As. Rar. III 54.

Murkhun Valley, 22 Aug. 3500—4500 m coll. Visser—Hooft no. 97 and 97a. Very common. Creeping between the stones and rocks. Also found at Batura in September.

Specimens seen: Western Himal. Prov. Lahol. coll. Schlagintweit no. 4190 — Tibet occ. reg. alp. alt. 15—16.000 feet coll. Thomson (Herb. Ind. or. Hook. f. et Th.) — Hab? Herb. Falconer no. 842 — Hab.? P. Brunonis Wall. Det. Wall.

Polygonum tortuosum Don.: Prodr. Fl. Nepal p. 71. Meissn.: D. C. Prodr., XIV, p. 138. Hooker: Fl. Br. Ind. vol. V p. 52.

Murkhun valley, 4000 m 23 Aug. coll. Visser—Hooft no. 87. Very common. Khunjerab-valley, 14 June 3300 m coll. Visser—Hooft no. 23. Between the stones.

Specimens seen: Khambjong coll. Younghusband no. 71. Tibet Frontier Commission 1903 — Tibet. occ. reg. alp. alt. 12—15.000 feet coll. Thomson (Herb. Ind. or. Hook. f. et Th.) — Tibet Prov. Hasora coll. Schlagintweit no. 6587.

Polygonum tubulosum Boiss. Diagn. Ser. I p. 83. var. **tibetica** Boiss. Fl. Orient. IV 1032. Meissn.: D. C. Prodr. XIV 1. p. 91. Hooker: Fl. Br. Ind. vol. V p. 27.

Batura, 2 September 4000 m coll. Visser—Hooft no. 105.

Specimens seen: Alpe Kuh Dekse coll. Th. Kotschy. Plantae Persicae austr. no. 500.

Oxyria digyna Hill Hort. Kew 158. Boiss.: Fl. Orient. IV 1004. Meissn.: D. C. Prodr. XIV 1 p. 137. Hooker: Fl. Br. Ind. vol V p. 58. Hooker: Ic. Pl. t. 483. Henrard: loc. cit. p. 2.

Khordopin glacier, 22 June 4000 m coll. Visser—Hooft no. 80 and 80a. Sandy soil beside the glacier.

Specimens seen: Tibet Prov. Guari Khorsum coll. Schlagintweit no. 7290 — Sikkim reg. temp. — alp. alt. 10—13.000 feet coll. Thomson (Herb. Ind. or. Hook. f. et Th.) — Tibet occ. reg. alp. alt. 12.000—15.000 feet coll. Thomson (Herb. Ind. or. Hook. f. et Th.) — Hab? coll. Visser—Hooft 1922 no. 97.

Rheum spiciforme Royle Ill. 318 t. 78. Meissn.: D. C. Prodr. XIV 1. p. 36. Hooker: Fl. Br. Ind. vol. V p. 55.

Khunjerab valley, 15 June 3300 m, coll. Visser—Hooft no. 28. Sandy river-channel, always along the wateredge.

No specimens seen.

CHENOPODIACEAE.

Chenopodium capitatum Aschers. Fl. Brand. 572.
Moq.: D. C. Prodr. 2. XIII 2 p. 83.

Batura, 3000 m 29 Aug. coll. Visser—Hooft no. 122.
Not frequent. Growing between the grass.
No specimens seen.

Chenopodium virgatum Jessen Deutsch. Exc. Fl. 1879 p. 300. Moq.: D. C. Prodr. XIII 2 p. 83. Boiss.: Fl. Orient. IV 905. Hooker: Fl. Br. Ind. vol. V p. 5.

Batura, 3000 m 29 Aug. coll. Visser—Hooft no. 122a.
Not frequent. Growing between the grass.

Specimens seen: Tibet occ. reg. temp. alt. 12—14.000 feet coll. Thomson (Herb. Ind. or. Hook. f. et Th.).

Haloxylon Thomsoni Bunge Boiss.: Fl. Orient. IV 950 var. *gracillima* Hooker: Fl. Br. Ind. vol. V p. 16
= *Caroxylon Griffithii* Moqu.? in Herb. Ind. or. Hook. f. et Th.

Karum Pir, 4800 m 20 Aug. coll. Visser—Hooft no. 96, and no. 96a. Stony soil.

Specimens seen: *Caroxylon Griffithii* Moqu? Tibet occ. reg. alp. et temp. alt. 10—15.000 feet coll. Thomson (Herb. Ind or. Hook. f. et Th.)

CARYOPHYLLACEAE.

Stellaria graminea Linn.: Sp. Pl. 422. Boiss.: Fl. Orient. I 707. Edgew. and Hooker: Fl. Br. Ind. vol. I p. 233.

Buksel Valley, 4000 m 29 June coll. Visser—Hooft no. 48. Growing between the grass.

Specimens seen: Tibet occ. reg. alp. alt. 11—15.000 feet coll. Thomson (Herb. Ind. or. Hook. f. et Th.).

Lychnis Himalayensis Edgew. in Fl. Br. Ind. vol. I p. 223.

Buksel valley, 4000 m 28 June coll. Visser—Hooft no. 65.
Growing between the grass.

No specimens seen.

Saponaria Vaccaria Linn. Sp. Pl. 409. Boiss.: Fl. Orient. I, 525. Edgew. and Hooker: Fl. Br. Ind. vol. I p. 217.

Gircha, 8 June 2600 m coll. Visser—Hooft no. 9b.
Sandy soil. Growing on agriculture-fields.

Silene conoidea Linn. Sp. Pl. 418. Boiss.: Fl. Orient. I 580. Edgew. and Hooker: Fl. Br. Ind. vol. I p. 218.

Gircha, 8 June 2600 m coll. Visser—Hooft no. 9a.
Sandy soil. Growing on agriculture fields.

Specimens seen: Kashmir coll. Falconer no. 220 (Herb. of the late East Ind. Comp.) — W. Himal. coll. Griffith (Herb. Hort. Bot. Calcut.) — Himal. bor. occ. reg. temp. — trop. alt. 1—8000 feet coll. Thomson (Herb. Ind. or. Hook. f. et Th.) — Ladak reg. temp. alt. 8—11.000 feet coll. Thomson (Herb. Ind. or. Hook. f. et Th.)

RANUNCULACEAE.

Clematis orientalis Linn. Sp. Pl. 543. var. *acutifolia* Hook. and Thomson: Fl. Ind. 9. Hook. and Th.: Fl. Br. Ind. vol. I p. 5 = *Cl. parvifolia* Edgew.

Shimshal, 3500 m 31 July coll. Visser—Hooft no. 79 and 79a.

Specimens seen: Tibet reg. temp. alt. 10—12.000 feet coll. Thomson (Herb. Ind. or. Hook. f. et Th.) — Kunawer reg. temp. alt. 6000 feet coll. Thomson (Herb. Ind. or. Hook. f. et Th.).

Ranunculus pulchellus C. A. Mey: Led. Fl. Alt. II 333. Hook. and Th.: Fl. Ind. p. 31: Fl. Br. Ind. vol. I p. 17.

Buksel valley, 4000 m 29 June coll. Visser—Hooft no. 49b. Growing between the grass. A very variable species.

Specimens seen: Kashmir Herb. Falconer no. 28 — Nubra reg. temp. alt. 10.500 feet coll. Thomson. (Herb. Ind. or. Hook. f. et Th.) — Chumbi Dr. King's collector (Herb. Hort. Bot. Calcut.) — Tibet, Ladak, Tsangla Pass. Herb. Schlagintweit no. 1630 — Tibet Prov. Nubra Herb. Schlagintweit no. 2159.

Delphinium Brunonianum Royle Ill. 56. Hooker and Thomson: Fl. Ind. 53. Fl. Br. Ind. vol I p. 27. Henrard: loc. cit. p. 3. Huth: Mon. d. Gatt. Delph. Bot. Jahrb. XX p. 392.

Batura glacier, 4500 m 4 September coll. Visser—Hooft no. 77. Growing between the grass. Frequent.

Specimens seen: Gongmoong dal 45—5000 m coll. Visser—Hooft 1922 no. 55. — W. Tibet Herb. Falconer no. 66. — Tibet, Ladak Yugu to Leh. Herb. Schlagintweit no. 1985. — Tibet occ. reg. alp. alt. 14—18.000 feet coll. Thomson (Herb. Ind. or. Hook. f. et Th.).

Aquilegia Moorcroftiana Wall. Cat. 4713. P. Brühl: De Ranunculaceis Indicis Disputationes, Journ. As. Soc. Bengal. vol. 61 p. II pag. 304. Hooker: Fl. Br. Ind. vol. I p. 24 = *A. vulgaris* var. *pyrenaica* and var. *alpina* Royle Ill. 55.

Batura, 2 September 4200 m coll. Visser—Hooft no. 101 and 101a. Flowers yellow. Only found at Batura.

No specimens seen.

BERBERIDACEAE.

Berberis ulicina Hook. f. and Th.: Fl. Ind. 227. Hooker f. and Thomson: Fl. Br. Ind. vol. I p. 111.

Khunjerab Valley, 3400 m 19 June coll. Visser—Hooft no. 55. A large shrub creeping over the stones.

Specimens seen: Ladak reg. alp. alt. 14.000 feet coll. Thomson. (Herb. Ind. or Hook f. et Th.).

Berberis vulgaris Linn. Sp. Pl. 330 var. *crataegina*?
Hooker f. et Thomson: Fl. Ind. p. 220. Fl. Br.
Ind. vol. I p. 109. D. C.: Prodr. I 106.

Batura, 3500 m 1 September coll. Visser—Hooft no. 114.
A bush growing on the slope.

No specimens seen.

PAPAVERACEAE.

Corydalis crassifolia Royle: Ill. 69. Hooker f. and
Thomson: Fl. Ind. 261. Hooker: Fl. Br. Ind. vol. I p. 127.

Ghujerab, 3900 m 3 July coll. Visser—Hooft no. 66.
Stony soil, not frequent.

Specimens seen: West Tibet Herb. Falconer no. 120. —
Zanskar reg. alp. alt. 15—16.000 feet coll. Thomson
(Herb. Ind. or. Hook. f. et Th.).

Corydalis adianthifolia Hook. f. et Th.: Fl. Ind.
271. Hooker f.: Fl. Br. Ind. Vol. I p. 127.

Khunjerab valley, 3300 m 14 June coll. Visser—Hooft
no. 24. Sandy soil. Rare.

Specimens seen: Zanskar reg. alp. alt. 12—14.000 feet
coll. Thomson (Herb. Ind. or. Hook. et Th.).

CRUCIFERAE.

Draba Fladnitzensis Wulfen in Jaqu. Misc. I 147.
D. C.: Prodr. I 169. Hooker f. and Thomson: Journ.
Linn. Soc. V 151. Hooker and Anders.: Fl. Br. Ind. vol. I
p. 143 = *D. Wahlenbergii* Hartm.

Buksel valley, 29 June 4000 m coll. Visser—Hooft no. 45.
Growing between the grass.

Specimens seen: Tibet occ. reg. alp. alt. 14—15.000 feet
coll. Thomson (Herb. Ind. or. Hook. f. et Th.).

Parrya exscapa Mey in Led. Fl. Alt. III38. Hooker f.
and Thomson: Journ. Linn. Soc. V 134. Hooker and
Anders.: Fl. Br. Ind. vol. I p. 131.

Buksel valley, 3800 m 28 June coll. Visser—Hooft no. 42. Also found in other Ghujerab and Shimshal valleys. A small plant growing on the sand.

Specimens seen: Tibet occ. reg. alp. alt. 14—18.000 feet coll. Thomson (Herb. Ind. or. Hook. f. et Th.) — Altai Herb. Hort. Petropol.

Malcolmia africana Ait.: Hort. Kew. ed. 2 IV 121. Hooker f. and Thomson: Journ. Linn. Soc. V 155. Hooker and Anders.: Fl. Br. Ind. vol. I p. 146.

Gircha, 2600 m 8 June coll. Visser—Hooft no. 11. Sandy soil.

Specimens seen: Panjab reg. trop. coll. Thomson (Herb. Ind. or. Hook. f. et Th.).

Eruca sativa Mill.: Gard. Dict. ed. VIII. Hooker f. and Thomson: Journ. Linn. Soc. vol. V 171. Hooker and Anders.: Fl. Br. Ind. vol. I p. 158.

Gircha, 8 June 2600 m coll. Visser—Hooft no. 5. Sandy soil. Frequent, a weed on agriculture fields.

Specimens seen: Punjab reg. trop. coll. Thomson (Herb. Ind. or. Hook. f. et Th.).

Smelowskia calycina C. A. Mey in Led. Fl. Alt. III 170.

Buksel, 28 June 4000 m coll. Visser—Hooft no. 41. Growing between the grass.

Specimens seen: Altai Ex. Acad. Petrop. 1835. Mt. Rocheur region alpine E. Bourgeau — Rocky Mountains 39—41° E. Hall and J. P. Harbour coll. 1862 — Rocky Mountains 49° coll. Lyall 1861. This species is very difficult to distinguish from *Sm. cinerea* C. A. Mey.

CRASSULACEAE.

Sedum Rhodiola D. C.: Prodr. III 401. Clarke in Hooker Fl. Br. Ind. Vol. II p. 417. Hooker f. and Thomson: Journ. Linn. Soc. II 95. Henrard: loc. cit p. 4.

Buksel valley, 28 June 4000 m coll. Visser—Hooft no. 26b.

Specimens seen: Shanposhi glacier 4000 m coll. Visser—Hooft 1922.

Sedum trifidum? Wall. Cat 7230. Clarke in Hooker Fl. Br. Ind. Vol. II p. 420. Hooker f. and Thomson: Journ. Linn. Soc. Vol. II 100.

Batura, 30 Aug. 3300 m coll. Visser—Hooft no. 107. Growing in tufts on a sandy or rocky soil.

Specimens seen: Gurhwal Herb. Falconer no. 480 — Sikkim reg. temp. alt. 6—10.000 feet coll. J. D. Hooker (Herb. Ind. or. Hook. f. et Th.) — Chumbi coll. Dunboo (Herb. Hort. Bot. Calcut.).

Sedum Himalense Don: Prodr. Fl. Nep. 212. D. C.: Prodr. III 402. Hooker f. and Thomson: Journ. Linn. Soc. II 27. Clarke in Hooker Fl. Br. Ind. II p. 418.

Khunjerab valley, 14 June 4000 m. Growing between the stones. coll. Visser—Hooft no. 26. Buksel valley 28 June 4000 m coll. Visser—Hooft no. 26a.

Specimens seen: Sikkim reg. alp. alt. 13—15.000 feet coll. Hooker (Herb. Ind. or. Hook. f. et Th.) — Sikkim reg. alp. alt. 12—17.000 feet, *Sedum Himalense* Don var? coll. Hooker (Herb. Ind. or. Hook. f. et Th.).

Sedum heterodontum Hook. f. et Th.: Journ. Linn. Soc. II 61. Clarke in Hooker Fl. Br. Ind. vol. II p. 417.

Khunjerab valley, 15 June 4000 m coll. Visser—Hooft no. 30. Rocky Soil. Rare.

Specimens seen: Himal. bor. occ. reg. alp. and temp. alt. 8—16.000 feet coll. Thomson (Herb. Ind. or. Hook. f. et Th.).

SAXIFRAGACEAE.

Saxifraga Stracheyi Hook. f. et Th.: Journ. Linn.

Soc. II 61. Clarke in Hooker Fl. Br. Ind. Vol. II p. 398 = *Bergenia Stracheyi* Engl. Bot. Zeit. 1868 p. 842.

Batura, 2 Sept. 3800 m coll. Visser—Hooft no. 111. In fruit. A stout plant often growing on stones or on the rocks. The leaves turning red. Only found at Batura.

Specimens seen: Tibet occ. Zanskar reg. alp. alt. 15.000 feet coll. Thomson. (Herb. Ind. or. Hook. f. et Th.).

ROSACEAE.

Rosa Webbiana Wall. Cat. 683. Royle Ill. 208. Hook.: Fl. Br. Ind. Vol II p. 366 = *R. pimpinellifolia* (Herb. Ind. or. Hook. f. et Th.).

Malungutti glacier, 10 Aug. 4000 m coll. Visser—Hooft no. 89 and 89a. In all the valleys of Hunze and Shimshal very frequent. A high bush. The colour varies from pink to white. No. 89a only in fruit.

Shimshal 7 July 3500 m coll. Visser—Hooft no. 90. I am not sure that all the forms belong to the same species, but I can not find enough differences to separate them.

Specimens seen: Himal. bor. occ. reg. temp. alt. 6—13.000 feet coll. Thomson (Herb. Ind. or. Hook. f. et Th.) — Tibet Province Balti alt. 6900—7500 feet Herb. Schlagintweit no. 809. — Tibet Province Ladak (Tsangla Pass) Herb. Schlagintweit no. 1629.

Potentilla sericea Linn. Sp. Pl. 495. Boiss.: Fl. Orient. II 709. Hooker: Fl. Br. Ind. Vol. II p. 354. Wolf: Monogr. d. Gat. *Potentilla* p. 161.

Buksel valley, 4000 m 28 June coll. Visser—Hooft no. 10a. On a grass spot between the stones.

Specimens seen: Ladak reg. temp. and alp. alt. 10—18.000 feet coll. Thomson (Herb. Ind. or. Hook. f. et Th.) — Ladak reg. alp. alt. 15.000 feet coll. Thomson (Herb. Ind. or. Hook. f. et Th.) — Tibet Province Ladak (Herb. Schlagintweit no. 1690).

Potentilla multifida Linn. Sp. Pl. 469. Boiss.: Fl. Orient. II 710. Hooker: Fl. Br. Ind. Vol. II p. 353. Wolf.: loc. cit. 154.

Zardigarbin valley, 3800 m 6 July coll. Visser—Hooft no. 10b. Growing between the grass.

Specimens seen: Ladak reg. temp. and alp. alt. 10—16.000 feet coll. Thomson (Herb. Ind. or. Hook. f. et Th.) — Gyantse coll. H. J. Walton Tibet Frontier Commission no. 129 — Hab. Himal. det. Royle.

Potentilla fruticosa Linn. Sp. Pl. 495. Hooker: Fl. Br. Ind. Vol. II p. 348. Boiss.: Fl. Orient. II 703 var. *parvifolia* Wolf.: loc. cit. p. 58 = var. *ochreata* Hook. in Herb. Ind. or. Hook. f. et Th.

Batura, 3 Sept. 3000 m coll. Visser—Hooft no. 116.

Specimens seen: Ladak and Piti reg. alp. alt. 14—17.000 feet coll. Thomson (Herb. Ind. or. Hook. f. et Th.).

Potentilla fruticosa Linn. Sp. Pl. 495. Boiss.: Fl. Orient. II 703 var. *pumila*. Hook f.: Fl. Br. Ind. Vol. II p. 348. Wolf: loc. cit. p. 59, Henrard: loc. cit p. 4.

Gircha, 2600 m 8 June coll. Visser—Hooft no. 50. A small creeping plant with long roots growing on a sandy soil. Very frequent. Also found at the Bara-Khun valley 3500 m 18 June.

Specimens seen: Hab? coll. Visser—Hooft 1922 no. 52. — W. Tibet Herb. Falconer no. 375. — Tibet Province Balti, Herb. Schlagintweit no. 6080. — Hab.? Herb. Hooker.

Potentilla bifurca Linn. Sp. Pl. 497. Boiss.: Fl. Orient. II 707. Hooker: Fl. Br. Ind. Vol. II p. 353. Wolf: loc. cit. p. 64.

Gircha, 8 June 2600 m coll. Visser—Hooft no. 10. Sandy soil.

Specimens seen: Tibet occ. reg. alp. alt. 10—17.000 feet coll. Thomson (Herb. Ind. or. Hook. f. et Th.).

Potentilla biflora Willd. Mag. d. Ges. naturf. Fr. 7. Berlin VII 297. Hooker: Fl. Br. Ind. vol. II p. 348 = *Potentilla fruticosa* var. *Inglistii* = *Potentilla Inglistii* Royle. Wolf: loc. cit. p. 70.

Murkhun Valley, 22 August 4500 m coll. Visser—Hooft no. 94. Small plant growing on the rocks.

Specimens seen: Sikkim reg. alp. alt. 13—14.000 feet coll. Hooker. *Potentilla eriocarpa* Wall = *Pot. biflora* Willd. (Herb. Ind. or. Hook. f. et Th.) — Ralam valley Kumaon coll. Ináyal no. 24.376. (Herb. Analyticum Buysman).

Potentilla Salesowiana Stephan: Mem. Soc. Nat. Mosc. II 6 t 3. Hooker. Fl. Br. Ind. vol. II p. 348. Wolf: loc. cit. p. 74. Henrard: loc. cit. p. 5.

Khordopin glacier, 24 July 4500 m coll. Visser—Hooft no. 81. Growing sandy and stony soil.

Specimens seen: Sasirpass (Ladak) 3800 m coll. Visser—Hooft 1922 no. 85. — West Tibet *Potentilla* no. 376 Falconer — Tibet province Balti (Herb. Schlagintweit no. 5888) — Piti and Ladak reg. alp. alt. 11—14.000 feet coll. Thomson (Herb. Ind. or. Hook. f. et Th.) — Altai (1839) Herb. Bunge.

Potentilla gelida C. A. Mey: Led. Fl. Ross. II 59. Hooker: Fl. Br. Ind. vol II 357. Wolf: loc. cit. 535 = *P. alpestris* (Herb. Hook. f. et Th.).

Buksel valley, 4000 m 29 June coll. Visser—Hooft no. 49a. Growing between the grass, frequent.

Specimens seen: Ladak reg. alp. alt. 13—17.000 feet coll. Thomson (Herb. Ind. or. Hook. f. et Th.) — Tomsk distr. Imenogorsk (Herb. Altaicum N. Iljin 1909).

Spiraea crenata Linn.: Sp. Pl. I 489. Boiss.: Fl. Orient. II 689. Schneider: Handbuch der Laubholzkunde I 452.

Batura, 3000 m 6 Sept. coll. Visser—Hooft no. 130.
A high bush growing on the slope of the rocks.

Specimens seen: *Rossia meridionalis*. (Herb. Hort. Petropol.) — *Transsilvanica* (Herb. Europ. Dr. C. Baenitz.).

Pyrus aucuparia Gaertn.: Ledeb. Fl. Ross. II 100.
Hooker: Fl. Br. Ind. vol. II 375. Boiss.: Fl. Orient. II 657.
var. *alpestris* Wimmer.

Batura, 1 September 3200 m coll. Visser—Hooft no. 106.
A tree growing on the slope of the mountain.

No Indian specimens seen.

LEGUMINOSAE.

Astragalus strictus Grah. in Wall. Cat. 5924. Baker in Hooker Fl. Br. Ind. Vol. II p. 124. Bunge: Mem. Acad. Imp. science. St. Petersb. VIIe série T XI no. 16, p. 23.

Ghujerab 3 July 3700 m coll. Visser—Hooft no. 59.
Growing between the grass.

Specimens seen: Tibet occ. reg. alp. 11—16.000 feet coll. Thomson (Herb. Ind. or. Hook. f. et Th.) — Western Himalaya Province Ladak (Herb. Schlagintweit no. 1830) — Gyantse coll. captain H. J. Walton, Tibet Frontier Commission 1904.

Astragalus cicerifolius Royle ex. Bunge: Mon I 44.
Baker in Hook. Fl. Br. Ind. vol. II 134. Henrard: loc. cit. p. 5.

Bara-Khun valley, 3500 m 18 June coll. Visser—Hooft no. 34. A prickly plant, growing on sand and stones.

Specimens seen: Thalam Buti 3800 m coll. Visser—Hooft 1922 no. 12 — Tibet Province Balti (Herb. Schlagintweit no. 5508) — Tibet occ. reg. temp. alt. 10—14.000 feet coll. Thomson (Herb. Ind. or. Hook. f. et Th.).

Astragalus Falconeri Bunge: Mon. I p. 4 and II p. 2.
Baker in Hook. Fl. Br. Ind. Vol. II p. 120.

Shimshal, 15 July, 4000 m coll. Visser—Hooft no. 92. Growing in a sandy channel of a river. Hispar 12 Sept. 3800 m coll. Visser—Hooft no. 92a growing in a sandy channel of a river.

No specimens seen.

Oxytropis Albana Stev.: Mem. Soc. Nat. Mosc. IV p. 94. Baker in Hook.: Fl. Br. Ind. vol. II = *Oxytropis Lapponica* var. *humifusa* = *Oxytropis humifusa* Kar. et Kir. Boiss.: Fl. Orient. II p. 505. Bunge: Beitr. Kenntniss der Fl. Ruszlands. St. Petersb. 1851.

Khunjerab, 20 June 3700 m coll. Visser—Hooft no. 56. Growing between the grass. Roots very long.

Specimens seen: *Oxytropis Albana* Stev. Hab. Karaveldagh alt. 9—11.000 f. Iter orientale P. Sintenis no. 7150.

Oxytropis mollis Royle Ill. 198. Baker in Hook. Fl. Br. Ind. vol. II p. 137.

Ghujerab, 3 July 3700 m coll. Visser—Hooft no. 59b. Growing between the grass.

Specimens seen: Kashmir Astragalus no. 424 = *Oxytropis mollis* Royle Herb. Falconer. — Zanskar reg. sub-trop. alt. 12.000 f. coll. Thomson (Herb. Ind. or. Hook. f. et Th.). — Western Himalaya Province Lahol. (Herb. Schlagintweit no. 3697). — Tibet province Hasora (Herb. Schlagintweit no. 6599).

Oxytropis microphylla D. C. Prodr. II p. 279. Baker in Hook. Fl. Br. Ind. Vol. II 139. Henrard: loc. cit. p. 6.

Khunjerab-valley, 14 June 3—4000 m coll. Visser—Hooft no. 22. Sand and stones. The color of the flowers is variable from blue to white. Odorous, very frequent. Also found in the Bara-Khun, Buksel, Maidur, Zardigarbin and Ghujerab valleys.

Specimens seen: Thalam Buti 3800 m coll. Visser—

Hooft 1922 no. 14. — Tibet occ. reg. alp. alt. 11—16.000 f. coll. Thomson (Herb. Ind. or. Hook. f. et Th.) — Tibet province Tsangskar (Herb. Schlagintweit no. 6238) — sub. nom. *Oxytropis chiliophylla* Royle: Voyage de V. Jacquemont aux Indes or.

Hedysarum Falconeri Baker in Hook.: Fl. Br. Ind. vol. II p. 146.

Khunjerab-valley, 15 June 3200 m coll. Visser—Hooft no. 29. Growing in a sandy river-channel. A small bush 60 cm high. Rare. In the Khordospin valley und at Batura very frequent.

No specimens seen.

Cicer soongaricum Steph. D. C.: Prodr. II 354. Boiss.: Fl. Orient. II 563. Baker in Hook. Fl. Br. Ind. vol II p. 354.

Khunjerab valley, 12 June 3150 m coll. Visser—Hooft no. 19. In a sandy and stony river-channel. Plant erect 30 cm high. In the valleys of Shimshal and at Batura frequent.

Specimens seen: Tibet occ. reg. alp. alt. 13—15.000 f. coll. Thomson (Herb. Ind. or. Hook. f. et Th.) — *Cicer Jacquemontii*, Himalaya, Jacquemont: Voyage aux Indes or.

Melilotus officinalis Lam. Fl. Fr. II 594. Boiss.: Fl. Orient. II 186. Baker in Hook. Fl. Br. Ind. vol. II p. 89.

Shimshal, 10 July 3000 m coll. Visser—Hooft no. 70. A weed in agriculture-fields.

Medicago sativa Linn. Sp. Pl. 778. Baker in Hook. I Fl. Br. Ind. Vol. II p. 90.

Gircha 8 June 2600 m coll. Visser—Hooft no. 4. A sandy soil. Very frequent. A weed on agriculture fields.

GERANIACEAE.

Geranium collinum Steph. in Willd. Sp. Pl. III p. 705. var. β **glandulosum** Le de b. Fl. Ross. I 184. Boiss.: Fl. Orient. I 874. Edgew. and Hook.: Fl. Br. Ind. vol. I 429. R. Knuth: Das Pflanzenreich IV 129 p. 186 = **G. Donianum** Wall.

Batura, 2 September 3800 m coll. Visser—Hooft no. 123. Growing in an alpine pasture. Very frequent.

Specimens seen: Kashmir (Herb. Falconer). — Western Himalaya Province Lahol (Herb. Schlagintweit 4153). Sikkim reg. temp. alt. 9—12.000 f. coll. Hooker. (Herb. Ind. or. Hook. f. et Th.) — Tibet occ. reg. alp. alt. 12—14.000 f. coll. Thomson (Herb. Ind. or. Hook. f. et Th.) — Tibet Dr. King's collector 1882 — Giangong Dr. Prain 1903.

ZYGOPHYLLACEAE.

Peganum Harmala Linn.: Sp. Pl. 444. Boiss.: Fl. Orient. I 917. Hooker: Fl. Br. Ind. vol. I p. 486.

Gircha, 9 June 2650 m coll. Visser—Hooft no. 14. Shimshal, 12 July. On a stony or sandy soil. Plants 30 cm high.

Specimens seen: Affghanistan (Herb. Griffith no. 1196) — N. W. India Prov. Panjab (Herb. Schlagintweit no. 11.115) — Himal. bor. occ. reg. trop. alt. 1—4000 feet coll. Thomson (Herb. Ind. or. Hook. f. et Th.).

TAMARICACEAE.

Myricaria elegans Royle Ill. 214. Thiselton Dyer in Hook.: Fl. Br. Ind. vol. I p. 250.

Camp on the junction of the Kilik and Hunza, 9 June 2750 m coll. Visser—Hooft no. 13. On the bank of the river. A high bush (4 m). Frequent up to a height of 3500 m in the Khunjerab and Bara-Khun valleys. Also found in 1922 in the Shyock-valley.

Specimens seen: Ladak reg. temp. alt. 11—12.000 feet coll. Thomson (Herb. Ind. or Hook. f. et Th.).

ELAEAGNACEAE.

Hippophae rhamnoïdes Linn. Sp. Pl. 1023. Boiss.: Fl. Orient. IV 1055. Hooker: Fl. Br. Ind. vol. V p. 203 subsp. *thibetana* Serv.

Hunza valley, 26 Aug. 3200 m coll. Visser—Hooft no. 99.

Specimens seen: Tibet reg. alp. 14—15.000 feet coll. Thomson (Herb. Ind. or. Hook. f. et Th.) — Tibet reg. temp. alt. 7—12.000 feet coll. Thomson (Herb. Ind. or. Hook. f. et Th.).

OENOTHERACEAE.

Epilobium angustifolium Linn. Sp. Pl. 347. Boiss.: Fl. Orient. II 745. Clarke in Hook.: Fl. Br. Ind. vol. II p. 582.

Batura, 3 September 3500—4500 m coll. Visser—Hooft no. 118. Very frequent, also found in various Hunza valleys.

Epilobium latifolium Linn. Sp. Pl. 347. D. C.: Prodr. III 40. Clarke in Hook.: Fl. Br. Ind. vol. II p. 583.

Verijerab-valley, 4000 m 25 July coll. Visser—Hooft no. 121. Growing on a sandy soil.

UMBELLIFERAE.

Heracleum pinnatum C. B. Clarke in Hook.: Fl. Br. Ind. vol. II p. 712. Henrard: Loc. cit. 6, *Heracleum* Sp. 14 (Herb. Ind. or. Hook. f. et Th.).

Shimshal, 25 July 3500 m coll. Visser—Hooft no. 88.

Specimens seen: Locality? 4300 m coll. Visser—Hooft 1922 no. 57 — Tibet occ. reg. temp. et alp. alt. 10—16.000 feet coll. Thomson (Herb. Ind. or. Hook. f. et Th.) — Tibet Province Ladak (Herb. Schlagintweit no. 5357).

Carum Carvi Linn.: Sp. Pl. 263. D. C.: Prodr. IV 115. Boiss.: Fl. Orient. vol. II 879. Clarke in Hook.: Fl. Br. Ind. Vol. II p. 680.

Gircha, 8 June 2500 m coll. Visser—Hooft no. 1. Frequent, between the grass. Also found at Shimshal 12 July. A frequent weed on agriculture fields.

Bupleurum falcatum Linn.: Sp. Pl. 237. Clarke in Hook.: Fl. Br. Ind. Vol. II p. 676. D. C.: Prodr. IV 132. Boiss.: Fl. Orient. I 850. Wolff: Das Pflanzenreich IV 228 p. 127.

Batura, 4 August 3800 m coll. Visser—Hooft no. 110. Growing in an alpine pasture.

Specimens seen: Khasia reg. temp. alt. 5—6000 feet coll. J. D. Hooker and Thomson. (Herb. Ind. or. Hook. f. et Th.).

Trachydium obtusiusculum C. B. Clarke in Hook.: Fl. Br. Ind. vol. II p. 673. D. C.: Prodr. IV 246 = **Trachypodium** sp. no. 3 (Herb. Ind. or. Hook. f. et Th.).

Ghujerab, 3700 m 4 July coll. Visser—Hooft no. 61. Specimens seen: Sikkim reg. alp. alt. 11—13.000 feet coll. Hooker (Herb. Ind. or. Hook. f. et Th.).

PRIMULACEAE.

Primula nivalis Pallas: Reise versch. Prov. russ. Reichs III 723. Duby in D. C.: Prodr. VIII 40. Pax and Knuth.: Das Pflanzenreich IV 237 p. 103. Henrard: loc. cit. p. 6.

Bara Khun, 4000 m 15 June coll. Visser—Hooft no. 51. The specimens collected at Maidur, 30 June 4000 m coll. Visser—Hooft no. 91 probably belong to this species. Growing on alpine pastures.

Specimens seen: Panzi Flora N. W. Himal. coll. Heyde

— Tibet occ. reg. alp. alt. 14—17.000 feet coll. Thomson (Herb. Ind. or. Hook. f. et Th.) — Bhot Kolla Flora N. W. Himal. (Herb. Hort. Bot. Calc.) coll. Meebold—Hab.? (Herb. Falconer) — Hab.? coll. Visser—Hooft 1922 no. 30.

Primula sibirica Jacq.: Misc. Austr. I 161. Duby in D. C.: Prodr. VIII 43. Hooker: Fl. Br. Ind. vol. III p. 487. Hooker: Bot. Mag. 3167, 3445, 6493. Pax and Knuth: Das Pflanzenreich IV 237 p. 76.

Khunjerab, 20 June 3700 m coll. Visser—Hooft no. 57. Growing between the grass in a moist environment, on the bank of a brook. Also found at Shimshal 14 July 3000 m.

Specimens seen: Tibet occ. reg. alp. alt. 11—15.000 feet coll. Thomson (Herb. Ind. or. Hook. f. et Th.) — Sikkim reg. alp. alt. 11—13.000 feet coll. Hooker (Herb. Ind. or. Hook. f. et Th.) — Chumbi, Dr. King's collector 1882.

Primula denticulata Smith: Exot. Bot. II 190 t 114. Hook.: Fl. Br. Ind. vol. III p. 485. Duby in D. C.: Prodr. VIII 44. Pax and Knuth: Das Pflanzenreich IV 237 p. 90.

Maidur valley, 3900 m 2 July coll. Visser—Hooft no. 52. Growing between the grass.

Specimens seen: Hab.? Primula spec. (Herb. Falconer) — W. Himalaya Prov. Kamaon (Herb. Schlagintweit no. 9812) — Nepal Wall. Cat. No. 607 B — Himal. bor. occ. reg. temp. alt. 6—12.000 feet coll. Thomson (Herb. Ind. or. Hook. f. et Th.) — Sikkim Dr. King's collector 1885.

Androsace flavescens Maxim.: Bul. Acad. St. Pétersbourg XXXII 506. Pax und Knuth: Das Pflanzenreich IV 237 p. 183.

Buksel-valley, 29 June 4000 m coll. Visser—Hooft no. 43. Growing between the grass.

No specimens seen.

Androsace villosa Linn. Sp. Pl. 142. Boiss.: Fl. Orient. IV 13. Duby in D. C.: Prodr. VIII 50. Hooker: Fl. Br. Ind. vol. III p. 499. Pax and Knuth: Das Pflanzenreich IV 237 p. 190.

Upper Khunjerab-valley, 15 June 4000 m coll. Visser—Hooft no. 27. Ghujerab 3 July 3900 m coll. Visser—Hooft no. 67. Growing on an alpine pasture.

Specimens seen: Himal. bor. occ. reg. temp. alt. 12—14.000 feet coll. Thomson (Herb. Ind. or. Hook. f. et Th.) — Tibet occ. reg. alp. alt. 11—15.000 feet coll. Thomson (Herb. Ind. or. Hook. f. et Th.).

Androsace rotundifolia Hardwiche: As. Research VI 350. Duby in D. C.: Prodr. VII 54. Hooker: Fl. Br. Ind. vol. III p. 496. Pax and Knuth: Das Pflanzenreich IV 237 p. 178. var. *Thomsonii*? Watt: Journ. Linn. Soc. XX 16 t 17b.

Batura, 3 September 3000 m coll. Visser—Hooft no. 119 Plants in fruit. All the specimens seen belong to the var. *glandulosa* and var. *incisa*.

Glaux maritima Linn. Sp. Pl. 207. Boiss.: Fl. Orient. IV 7. Hooker: Fl. Br. Ind. Vol. III p. 505. Duby in D. C.: Prodr. VIII 59. Pax and Knuth: Das Pflanzenreich IV 237 p. 319.

Gircha, 8 June 2600 m coll. Visser—Hooft no. 8. Growing on a sandy and stony soil, between the stones.

Specimens seen: Tibet occ. reg. temp. alt. 12—15.000 feet coll. Thomson (Herb. Ind. or. Hook. f. et Th.).

PLUMBAGINACEAE.

Acantholimon lycopodioides Boiss. D. C.: Prodr. XII

632. Clarke in Hook.: Fl. Br. Ind. vol. III p. 479. Henrard: loc. cit. p. 6 = *Acantholimon tibeticum* (Herb. Ind. or. Hook. f. et Th.).

Bara-Khun valley, 3500 m 18 June coll. Visser—Hooft no. 35. Growing on a sandy and stony soil.

Specimens seen: Thalam Buti 3800 m coll. Visser—Hooft 1922 no. 16 — Herb. East India Comp. coll. Falconer no. 817. — Tibet occ. reg. alp. coll. Thomson (Herb. Ind. or. Hook. f. et Th.).

GENTIANACEAE.

Gentiana aurea Linn.: Syst. ed. X 951. D. C.: Prodr. IX 100. Boiss.: Fl. Orient. IV 71. Clarke: Fl. Br. Ind. vol. IV p. 108.

Shimshal, 10 July 3000 m coll. Visser—Hooft no. 69. A weed on agriculture fields.

Gentiana detonsa Fries. Act. Hafn. X 435. D. C.: Prodr. IX 101. Clarke in Hook.: Fl. Br. Ind. vol. IV p. 118.

Batura, 3 September 4000 m coll. Visser—Hooft no. 102. Growing on an alpine pasture.

Specimens seen: Tibet occ. reg. alp. alt. 13—16.000 feet coll. Thomson (Herb. Ind. or. Hook. f. et Th.) — Tibet. Province Nubra (Herb. Schlagintweit no. 2105).

CONVOLVULACEAE.

Convolvulus arvensis Linn: Sp. Pl. 153. Clarke in Hook.: Fl. Br. Ind. vol. IV p. 219.

Shimshal, 12 July 3600 m coll. Visser—Hooft no. 82.

BORRAGINACEAE.

Echinospermum barbatum L. e h m: Asperifol. 128. D. C.: Prodr. X 137. Boiss.: Fl. Orient. IV 250. Clarke in Hook.: Fl. Br. Ind. vol. IV p. 163.

Khunjerab-valley, 12 June 3150 m coll. Visser—Hooft no. 16 and 16a. Growing on a sandy soil.

Specimens seen: Tibet occ. reg. temp. alt. 12—14.000 feet coll. Thomson (Herb. Ind. or. Hook. f. et Th.).

Eritrichium strictum Dcne in Jacquem.: Voy. Bot. 125. D. C.: Prodr. X 128. Clarke in Hook.: Fl. Br. Ind. vol. IV p. 164. Henrard: loc. cit. p. 7.

Shimshal valley, 8 July 3000 m coll. Visser—Hooft no. 75.

Specimens seen: Lashi Kamp alt. 4800 m coll. Visser—Hooft 1922 no. 39 — W. Himal. Province Lahol (Herb. Schlagintweit no. 2787) — W. Himal. Province Lahol (Herb. Schlagintweit no. 3701) — Tibet Province Balti (Herb. Schlagintweit no. 6100) — Tibet occ. reg. alp. alt. 13—14.000 feet coll. Thomson (Herb. Ind. or. Hook. f. et Th.).

Lindelofia angustifolia Brand in Das Pflanzenreich IV 252 p. 87 = *Solenanthus angustifolius* Schr. in D. C.: Prodr. X 165 = *Lindelofia Benthami* Hook. in Fl. Br. Ind. vol. IV p. 159.

Khunjerab, 25 June 3700 m coll. Visser—Hooft no. 50. Frequent in the Khunjerab and Ghujerab valleys.

No specimens seen.

Mertensia tibetica Clarke in Hook. Fl. Br. Ind. vol. IV p. 171.

Upper Khunjerab, 15 June 4500 m coll. Visser—Hooft no. 120.

No specimens seen.

Arnebia tibetana Kurz.: Journ. As. Soc. 1874. Clarke in Hook.: Fl. Br. Ind. vol. IV. p. 176 = *Arnebia* spec. no. 7. (Herb. Ind. or. Hook. f. et Th.).

Khunjerab valley, 12 June 3150 m coll. Visser—Hooft

no. 15. Growing in a river-channel on a sandy and stony soil. Rather frequent in Bara-Khun and Khunjerab up to a height of 3500 m. Odoriferous.

Specimens seen: Tibet. occ. reg. alp. alt. 14—16.000 feet coll. Thomson (Herb. Ind. or. Hook. f. et Th.).

Macrotomia perennis Boiss.: Fl. Orient. IV 212. Clarke: Journ. Linn. Soc. XVIII 525. Hooker: Fl. Br. Ind. vol. IV p. 177 = *M. endochroma* Hook. f. et Th.

Khunjerab valley, 12 June 3000—3500 m coll. Visser—Hooft no. 17. Very frequent in Bara-Khun, Khunjerab and Ghujerab. Growing on a sandy and stony soil. The colour of the flowers is very variable.

Specimens seen: Tibet occ. reg. alp. alt. 14—16.000 feet coll. Thomson (Herb. Ind. or. Hook. f. et Th.).

Lycopsis arvensis Linn.: Sp. Pl. 139. Clarke in Hook.: Fl. Br. Ind. vol. IV p. 169.

Gircha, 8 June 2600 m coll. Visser—Hooft no. 6. Frequent on agriculture-fields.

LABIATAE.

Scutellaria prostrata Jacquem.: Benth. Lab. 733. D. C.: Prodr. XII 413. Hooker: Fl. Br. Ind. Vol. IV p. 667.

Batura, 3 September 3800 m coll. Visser—Hooft no. 117. Growing on an alpine pasture. Rather rare, only found at Batura.

Specimens seen: Hab? (Herb. Falconer) — Himalaya bor. occ. reg. temp. alt. 8—14.000 feet. coll. Thomson (Herb. Ind. or. Hook. f. et Th.).

Thymus Serpyllum Linn.: Sp. Pl. 590. Boiss.: Fl. Orient. IV 554. Hooker: Fl. Br. Ind. Vol. IV p. 649.

Batura, 4 Sept. 4000 m coll. Visser—Hooft no. 113. Frequent, also in Zardigarbin-valley and Murkhun-valley.

Specimens seen: Himal. bor. occ. reg. temp. alt. 5—15.000 feet coll. Thomson (Herb. Ind. or. Hook. f. et Th.) — W. Himalaya Prov. Kamaon alt. 5000—7800 feet. (Herb. Schlagintweit no. 9754) — W. Himalaya Province Lahol (Schlagintweit no. 4108).

Nepeta longibracteata Benth. Lab. 737. Hooker: Fl. Br. Ind. vol. IV p. 660. Henrard: loc. cit. p. 7.

Side-valley of the Ghujerab, 1 July 4200 m coll. Visser—Hooft no. 63. Growing between the stones, odoriferous.

Specimens seen: Kardong Pass 5000 m coll. Visser—Hooft 1922 no. 3. — Tibet occ. reg. alp. alt. 17.000 feet coll. Thomson. (Herb. Ind. or. Hook. f. et Th.).

Dracocephalum stamineum Kar. et Kir.: Bull. Soc. Nat. Mosc. XV p. 423. Hooker: Fl. Br. Ind. vol. IV p. 666.

Khunjerab-valley, 3300 m 14 June coll. Visser—Hooft no. 25. Much resembling a *Nepeta*. Odoriferous.

Specimens seen: Tibet occ. reg. alp. alt. 14—16.000 feet coll. Thomson (Herb. Ind. or. Hook. f. et Th.).

Elsholtzia eriostachya Benth.: Lab. 163 et D. C.; Prodr. XII 162. Hooker: Fl. Br. Ind. vol. IV p. 645.

Gircha, 8 June 2600 m coll. Visser—Hooft no. 7. Shimshal 12 July 3000 m. A weed on agriculture fields. Odoriferous.

Specimens seen: Tibet occ. reg. temp. alt. 11—13.000 feet coll. Thomson (Herb. Ind. or. Hook. f. et Th.) — Tibet Province Hasora (Herb. Schlagintweit no. 7414).

Perowskia abrotanoides Kir.: Bull. Mosc. 1841, 15 t.1. Boiss.: Fl. Orient: IV 389. Hooker: Fl. Br. Ind. vol. IV p. 652 Henrard: loc. cit. p. 7.

Hunza valley, 2500 m 7 September coll. Visser—Hooft no. 128 Frequent.

Specimens seen: Tibet occ. reg. temp. alt. 9—11.000 feet coll. Thomson (Herb. Ind. or. Hook. f. et Th.) — Tibet, Province Balti (Herb. Schlagintweit no. 5832 and no. 5735) — Tibet Province Nubra (Herb. Schlagintweit no. 2270) — Nubradal near Takse alt. 3250 m coll. Visser—Hooft 1922 no. 60.

SCROPHULARIACEAE.

Pedicularis cheilanthifolia Schrenck in Fish. et Mey.: Enum. Pl. Nov. F. II 19. Benth. D. C.: Prodr. X 562. Hook.: Fl. Br. Ind. vol. IV p. 308. Henrard: loc. cit. p. 8 = *Ped. abrotanifolia* in Herb. Ind. or. Hook. f. et Th. Khunjerab, 24 June 3500 m coll. Visser—Hooft no. 68. Growing between the grass.

Specimens seen: Lashi valley alt. 4800 m coll. Visser—Hooft 1922 no. 37 — Tibet occ. reg. alp. alt. 11—15.000 feet coll. Thomson (Herb. Ind. or. Hook. f. et Th.) — Flora Chumbi and Phari coll. Dunboo (Herb. Hort. Bot. Calcut.).

Lagotis globosa Kurz.: Journ. As. Soc. XXXIX 280 t 7. Hooker: Fl. Br. Ind. Vol. IV p. 558. Henrard: loc. cit. p. 8.

Khunjerab-valley, 16 June 4000 m coll. Visser—Hooft no. 31. Growing on a rocky soil. Rare.

Specimens seen: Lashi glacier 5090 m coll. Visser—Hooft 1922 no. 43. — Tserichan pass coll. Heyde 1872. (Herb. Hort. Bot. Calc.) The specimens seen have much larger bracts. These bracts, being larger than the flowers, conceal them entirely. The bracts of this specimen are just as large as the flowers. Because the plant is rather young it is however possible that the bracts are not yet grown out to their full extent.

PLANTAGINACEAE.

Plantago tibetica Hook. f. et Th.: Fl. Br. Ind. vol. IV p. 706.

Shimshal, 8 July 3500 m coll. Visser—Hooft no. 93.
A weed on agriculture fields.

Specimens seen: Gyantse coll. H. J. Walton Tibet Frontier commission 1904 no. 3 — Tibet occ. reg. temp. coll. Thomson (Herb. Ind. or. Hook. f. et Th.).

CAPRIFOLIACEAE.

Lonicera asperifolia Hook. f. et Th.: Journ. Linn. Soc. II 166. Clarke in Hook. Fl. Br. Ind. vol. III p. 11.
Batura, 1 Sept. 3700 m coll. Visser—Hooft no. 98.
A bush with red berries. Bara-Khun valley 3500—4000 m 18 June coll. Visser—Hooft no. 32. Growing on a sandy and stony soil. Very frequent, also found in the Khunjerab, Ghujerab and Shimshal valleys.

Specimens seen: Tibet occ. (Zanskar) reg. alp. alt. 13—14.000 feet coll. Thomson (Herb. Ind. or. Hook. f. et Th.).

COMPOSITAE.

Solidago Virga-aurea Linn.: Sp. Pl. 880. Clarke: Compositae Indicae 35 Hooker: Fl. Br. Ind. vol. III p. 245.
Batura, 28 August 3000 m coll. Visser—Hooft no. 129.

Aster tibeticus Hook. f. in Fl. Br. Ind. vol. III p. 251. Henrard: loc. cit. 8.

Buksel-valley 29 June 4000 m coll. Visser—Hooft no. 44.
Growing between the stones also found between the grass.

Specimens seen: Lashi glacier coll. Visser—Hooft 1922 no. 49.

Erigeron alpinus Linn.: Sp. Pl. 653. Boiss.: Fl. Orient. III 165. Hook.: Fl. Br. Ind. vol. III p. 255. = *E. acre* Clarke: Comp. Ind. 52.

Batura, 2 September 4200 m coll. Visser—Hooft no. 100.
Growing on an alpine pasture.

Specimens seen: W. Himal. Province Kashmir (Herb.

Schlagintweit 7548) — W. Himal. Province Simla (Herb. Schlagintweit 5050) Sub nomen *Er. multicaule* Wall.

Leontopodium alpinum Cass. D. C.: Prodr. VI 275. Hooker Fl. Br. Ind. vol. III p. 279.

Murkhun valley, 22 August 4000—5000 m coll. Visser—Hooft no. 95. Flowers small. Growing on an alpine pasture. Only found in this place, but there frequent.

Anaphalis contorta Hook. f. in Fl. Br. Ind. vol. III p. 284 = *A. tenella* Clarke: Comp. Ind. 106 = *Antennaria contorta* Don.: Prodr. 175.

Yazghil-valley, 21 July 4000 m coll. Visser—Hooft no. 76 and 76a. Flowers white and rose. Growing on a sandy and stony soil.

Specimens seen: Khasia reg. temp. alt. 4800 feet coll. Hooker (Herb. Ind. or. Hook. f. et Th.) — Sikkim alt. 15.000 feet Dr. King's collector (Herb. Hort. Bot. Calcut.) — East Bengal. (Herb. Griffith no. 3229).

Anaphalis nubigena D. C. Prodr. VI 272. var. *intermedia* Hooker Fl. Br. Ind. vol. III p. 279.

Batura, 30 August 3000—4000 m coll. Visser—Hooft no. 108 and 108a. Flowers white and rose. Very frequent at Batura. Growing on a sandy and stony soil.

Specimens seen: Himal. bor. occ. reg. temp. alt. 9—13.000 feet coll. Thomson (Herb. Ind. or. Hook. f. et Th.) — Sikkim reg. alp. alt. 11—16.000 feet coll. Hooker (Herb. Ind. or. Hook. f. et Th.) — Hab? (Herb. Falconer no. 575) W. Himal. Prov. Kishtvar. (Herb. Schlagintweit).

Inula obtusifolia Kerner. Nov. Sp. Pl. Jaeschke 18. Hooker Fl. Br. Ind. vol. III p. 293 = *I. Thomsonii* Clarke Comp. Ind. 120.

Batura, 28 August 2800 m coll. Visser—Hooft no. 125. Frequent, growing between the grass.

No specimens seen.

Allardia tomentosa Dcne in Jacquem: Voy. Bot. 87 t. 95. Hooker: Fl. Br. Ind. vol. III p. 313. Clarke: Comp. Ind. 144.

Maidur-valley, 2 July 4400 m coll. Visser—Hooft no. 64. Flowers white and rose.

Specimens seen: Karakorum coll. Clarke no. 30.253.

Allardia Stoliczkaï Clarke: Comp. Ind. 145. Hooker: Fl. Br. Ind. vol. III p. 313.

Buksel-valley, 28 June 4000 m coll. Visser—Hooft no. 53. Flowers white and rose-lilac. Growing between the stones. This species is very difficult to distinguish from *Allardia tomentosa* Dcne.

No specimens seen.

Allardia glabra Dcne. in Jacquem.: Voy. Bot. 88 t. 98. Clarke: Comp. Ind. 145. Hooker: Fl. Br. Ind. vol. III p. 313. = *A. tridactylites* Hook. f. et Th. Clarke: Comp. Ind. 144.

Batura, 2 September 4200 m coll. Visser—Hooft no. 104. Growing between the grass in the neighbourhood of water. A low plant with long roots.

Specimens seen: Sikkim alt. 15—17.000 feet reg. alp. coll. Hooker (Herb. Ind. or. Hook. f. et Th.) — Tibet occ. reg. alp. alt. 15—17.000 feet. coll. Thomson (Herb. Ind. or. Hook. f. et Th.) — Tibet Province Balti (Herb. Schlagintweit 5915).

Chrysanthemum Stoliczkaï Clarke: Comp. Ind. 147. Hooker: Fl. Br. Ind. vol. III p. 314.

Batura, 2 September 4000 m coll. Visser—Hooft no. 124. Growing on an alpine pasture. Frequent.

No specimens seen.

Tanacetum artemisioides Schultz-Bip. in Herb.

Hook. Hooker: Fl. Br. Ind. vol. III p. 318 = *T. fasciculata* in Herb. Ind. or. Hook. f. et Th.

Batura, 28 August 2500 m coll. Visser—Hooft no. 127. Frequent.

Specimens seen: Tibet Balti reg. temp. alt. 8—9000 feet coll. Thomson (Herb. Ind. or Hook. f. et Th.).

Tanacetum gracile Hook. f. et Th. in Hooker: Fl. Br. Ind. vol. III p. 318. = *T. fruticosum* Clarke: Comp. Ind. 153.

Shimshal valley, 25 July 4000 m coll. Visser—Hooft no. 78. Growing on a sandy soil.

Specimens seen: Ladak reg. temp. alt. 11—12.000 feet coll. Thomson (Herb. Ind. or. Hook. f. et Th.).

Senecio chrysanthemoides D. C.: Prodr. VI 365. Hooker: Fl. Br. Ind. vol. III p. 339.

Batura, 3 September 3000 m coll. Visser—Hooft no. 115. A high plant growing between the grass.

Specimens seen: Khasia reg. temp. alt. 4—5000 feet coll. Hooker and Thomson (Herb. Ind. or. Hook. f. et Th.). Tibet Province Hasora (Herb. Schlagintweit no. 6892).

Echinops echinatus D. C.: Prodr. VI 526. Hooker: Fl. Br. Ind. vol. III p. 358. Clarke: Comp. Ind. 211. Roxburgh: Fl. Ind. III 647.

Shimshal-valley, 20 August 2500—3500 m coll. Visser—Hooft no. 85. Growing in sandy soil.

Specimens seen: Punjab reg. trop. alt. 1000 feet coll. Thomson (Herb. Ind. or. Hook. f. et Th.) — Hab. ? (Herb. Wight no. 1666).

Cnicus arvensis Hoffm. Deutsch.: Fl. 1. II 130. Clarke: Comp. Ind. 216. Hooker: Fl. Br. Ind. vol. III 362.

Shimshal, 7 August 3500 m coll. Visser—Hooft no. 84. Growing on agriculture fields.

Saussurea sorocephala Hook. f. et Th. in Clarke: Comp. Ind. 226. Hooker: Fl. Br. Ind. vol. III p. 377. Henrard: loc. cit. p. 9.

Maidur-valley, 30 June 4000 m coll. Visser—Hooft no. 58. A low plant with very long roots. Not frequent.

Specimens seen: Lashi glacier, on moraine, 5090 coll. Visser—Hooft 1922 no. 33 — Tibet occ. reg. alp. alt. 15—18.000 feet coll. Thomson (Herb. Ind. or. Hook. f. et Th.).

Jurinea ceratocarpa Benth. in Gen. Plant. II 474. Clarke: Comp. Ind. 236. Hooker: Fl. Br. Ind. vol. III 378. var. *depressa* Clarke.

Batura, 29 August 3000 m coll. Visser—Hooft no. 109. A very low plant, nearly without stem.

Specimens seen: Kashmir reg. temp. alt. 9—12.000 feet coll. Thomson (Herb. Ind. or. Hook. f. et Th.) — Hab. (Herb. Falconer no. 598).

Crepis flexuosa Benth.: Gen. Plant. II p. 515. Clarke: Comp. Ind. 254 = *C. glauca* Benth. Gen. Plant. II 515. Hooker: Fl. Br. Ind. vol. III p. 394.

Shimshal-valley, 3500 m 19 July coll. Visser—Hooft 74. Growing in a river-channel.

Specimens seen: Tibet occ. reg. temp. et alp. alt. 8—17.000 feet coll. Thomson (Herb. or Hook. f. et Th.).

Taraxacum officinale Wigg. Prim. Fl. Holsat. 56 Clarke: Comp. Ind. 258. Hooker: Fl. Br. Ind. vol. III p. 401. Henrard: loc. cit. p. 8.

Gircha, 8 June 2500 m coll. Visser—Hooft no. 2. Frequent.

var. *parvula* Clarke: Comp. Ind. 258. Hooker: Fl. Br. Ind. vol. III p. 401.

Bara-Khun-valley, 18 June 3500—4000 m coll. Visser—

Hooft no. 33. Growing in sandy soil between the grass. Found in all Khunjerab, Ghujerab and Shimshal valleys at an altitude of 3000—4000 m

Lactuca tartarica C. A. Mey.: Enum. Pl. Cauc. 56. Clarke: Comp. Ind. 267. Hooker: Fl. Br. Ind. vol. III p. 406.

Shimshal, 8 July 3500 m. coll. Visser—Hooft no. 86. A weed in agriculture fields.

Specimens seen: Tibet occ. reg. alp. alt. 12—16.000 feet coll. Thomson (Herb. Ind. or. Hook. f. et Th.).